



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/811,309

03/29/2004

Cory Richardson

3691-666

8273

23117 7590 05/14/2008
NIXON & VANDERHYE, PC
901 NORTH GLEBE ROAD, 11TH FLOOR
ARLINGTON, VA 22203

EXAMINER

LAZORCIK, JASON L

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

05/14/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/811,309	Applicant(s) RICHARDSON ET AL.	
	Examiner JASON L. LAZORCIK	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 10, 2008 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 8, 9, 10, 11, 19 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The limitation "at least (3 or 5) times more resistant to scratching via a glove mar test" in claims 8 and 9 is a relative concept which has not been adequately defined in the specification or claims in such manner as to be enabling for one of ordinary skill in the art. The physical process included in "a glove mar test" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and

Art Unit: 1791

one of ordinary skill in the art would not be reasonably enabled to make and/or use the disclosed invention. Therefore a process which yields a three fold or five fold enhancement in resistance to scratching by said "glove mar test" test as set forth in claims 8 and 9, respectively, is likewise not enabled by the specification.

Claims 8, 9, 10, 11, 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation "at least (3 or 5) times more resistant to scratching via a glove mar test" in claims 8 and 9 is a relative concept which renders the claim indefinite. The physical process included in "a glove mar test" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Therefore a process which yields a three fold or five fold enhancement in resistance to scratching by said "glove mar test" test as set forth in claims 8 and 9, respectively, is indefinite.

Likewise, the limitation "at least (3 or 5) times more resistant to scratching via an abrasion brush test" in claims 10 and 11 or an abrasion test in claims 19 and 20 represent relative concepts which render the claim indefinite. Neither physical process encompassed in "an abrasion brush test" or a general "abrasion test" are adequately defined in the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of

Art Unit: 1791

the scope of the invention. Therefore a process which yields a three fold or five fold enhancement in resistance to scratching by said "abrasion brush test" or a general "abrasion test" as set forth in claims 8 and 9 and claims 19 and 20 , respectively, is indefinite.

For at least these reasons, Applicant is requested to delete the aforementioned limitations (e.g. claims 8-11 and 19-20) from the application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stachowiak (US 6,602,608) in view of Medwick (US 6,882,773) and Konda (US 5,254,201).

Stachowiak teaches a multi-layered low-E reflective film (Table 1, Figure 1) comprising at least one infrared reflecting layer with silver “sandwiched” between at least a first and second dielectric layer. The reference teaches that the layers are deposited by a sputter coating process (Column 5, lines 57-67), that the uppermost layer of the coating comprises Silicon Nitride, that it is known to heat treat said coated articles (e.g., thermally temper, heat bend or the like) (column 2, Lines 58-63), and finally to incorporate said sheets into “architectural windows (e.g. IG units)”. The instant reference clearly indicates that the disclosed thin film structure will have a transmission of at least 65% through at least 80% on occasion (Column 6, Lines 51-53). Stachowiak is silent regarding the subsequent processing of the Low-E glass sheet after thin film deposition or regarding the application of a removable, protective coating to the substrate.

In accord with applicants disclosed (prior art) figure 1, it is also understood to be well known and established in the art to coat the Low-E glass substrate with a protective film and to subsequently cut, edge seam, and wash the coated substrate. This assertion is corroborated by the teachings set forth by Medwick (US 6,882,773) which indicates that “for substrates with one or more functional coatings (e.g. a functional coating on the first surface) the protective coating is preferably deposited over at least a portion of the functional coating(s) to protect the functional coating(s) from mechanical and/or chemical damage and/or misidentification during shipment, storage, handling, and processing” (Column 3, Lines 15-21). The reference continues by specifically citing the need to protect the functional coating on Insulated Glass (IG) units from marring or

Art Unit: 1791

damage during processing, shipment or storage (column 1, Lines 40-45). Finally, the instant reference teaches that it is beneficial to alter the color of the coating in any manner deemed appropriate to clearly and easily identify the nature of the coating on the glass substrate (including altering the coating to a green tint) (Column 12, Lines 6-55). By applicants admitted prior art and the teachings set forth by Medwick, it would have been obvious to one of ordinary skill in the art to apply a protective film to the IG substrate prior to cutting, edge seaming, and washing said substrate in order to appropriately protect the functional surface from damage or marring. The combined Medwick and Stachowiak still fail to explicitly set forth the application of a flexible solid film comprising polyethylene with an adhesive layer comprising acrylic as the protective film.

Konda (US 5,254,201) teaches that a preformed and solid protective sheet having excellent water resistance can be made from polyethylene (column 3, Lines 21-28) with a pressure-sensitive adhesive layer of an acrylic type (Column 3, Line 46). The instant reference continues by disclosing the application of this protective sheet to a semiconductor wafer to prevent damage to the thin film circuit pattern printed on the surface thereof during grinding and/or polishing procedures performed on the wafer (Column 1, Lines 15-58). It further indicates that when the presence of the film is no longer deemed necessary, it can be directly stripped from the surface of the substrate either by hand or machine. The immediate reference is considered to be analogous prior art for the claimed subject matter since the disclosed film is applied to a substrate in such a manner to protect the fine structure of a film formed thereon from damage or

marring. It would therefore have been obvious to one of ordinary skill in the art of thin film processing to utilize the solid film set forth by Konda as the protective film collectively taught by the Medwick and Stachowiak references. This would be an obvious substitution for the Medwick film taught above since the pressure sensitive adhesive in the Konda film allows simple removal of the film by machine or by hand when it's presence is no longer required.

With respect to claims 8, 9, 10, 11, 19 and 20, it is the Examiners position, absent any compelling evidence to the contrary, that application of the Konda protective sheet to the Stachowiak Low-E glass substrate in the manner set forth above would inherently yield Applicants claimed enhanced resistance to scratching via either the glove mar test and/or the abrasion brush tests. Alternately, it is the Examiners understanding that the relative resistance to scratching would be recognized by one of ordinary skill in the art as a function of the thickness of the protective sheet coating. It follows that a skilled artisan in functionally coated glass sheets would be fully equipped to specify an appropriate thickness for the protective sheet in view of the typical processing and handling conditions for said glass sheet. In short, Applicants claimed scratch performance would reasonably be derived by one of ordinary skill in the arts through no more than routine experimentation and optimization of the protective sheet thickness.

Regarding Applicants newly submitted claims 21 and 22, none of the cited prior art references explicitly limit the substrate temperature to fall between 60-120°C or 90-120°C as required in the respectively identified claims. With this point in mind, it is the Examiners position that the claimed temperature ranges are insufficient to patentably distinguish the claimed invention over that set forth in the collective prior art.

Applicant's specification indicates that the claimed temperature range naturally flows from the deposition of the Low-E coating process (paragraph [0038], pages 10-11). One of ordinary skill in the art at the time of the invention would have recognized the benefit to applying the protective sheet in as expedient a timeframe as possible after formation of the Low-E coating, namely as a means to minimize the potential for surface contamination. The skilled practitioner would have likewise been well aware that application of the protective sheet on a substrate of too high a temperature would result in potentially irreversible damage to either the organic adhesive and/or polyethylene backing sheet. In view of the foregoing and absent any evidence of unexpected results to the contrary, it is the Examiners position that the claimed substrate temperature ranges would have been derived by the skilled practitioner through no more than routine experimentation and optimization of the prior art disclosed process.

Response to Arguments

Arguments against Claim Rejections under 35 U.S.C. §112 ¶2

Applicant argues that references made to a brush test and a glove mar test in paragraph [0049] provide basis of sufficient clarity and definition that one of ordinary

skill in the art would have been substantially apprised of the particular metes and bounds of patent protection. Examiner strongly disagrees.

Claims 8 and 9 require that the an unprotected article after peeling off of the protective sheet is respectively 3 or 5 times more resistant to scratching via a glove mar test, than a comparable article which never had the protective sheet coating. Claims 10 and 11 require that the an unprotected article after peeling off of the protective sheet is respectively 3 or 5 times more resistant to scratching via a abrasion brush test, than a comparable article which never had the protective sheet coating. Claims 19 and 20 require that the an unprotected article after peeling off of the protective sheet is respectively 3 or 5 times more resistant to a generic abrasion test, than a comparable article which never had the protective sheet coating.

It is the Examiners express position that Applicant has provided insufficient basis for the claimed glove mar test, abrasion brush test, or the generic abrasion test such that one having an ordinary level of skill in the art would be able to reproduce the conditions of said test with sufficient precision to ascertain the limits of the claimed invention. With this point in mind, the particular metes and bounds of Applicants limitation of 3 or 5 times elevated resistance to scratching are at least unclear and indefinite. Restated, Applicant has provided insufficient quantitative basis for the test conditions and/or for a "normal" level of scratching imposed by said tests for one of ordinary skill to adequately ascertain the claimed 3 or 5 times advantage of the claimed structure. The indefinite and ill-defined nature of the instant limitations therefore precludes an examination of these claims upon their merits

Additionally upon further review by the Examiner, the claims at issue appear to be statements of intended use, where the product of the claimed method step is subsequently subjected to one of the claimed test procedures. As such it is unclear how the instant limitations drawn to the intended use of the product-by-process resulting from the claimed method provides any further or substantial limitation upon the claimed method.

For at least these reasons, Applicant is requested to delete the aforementioned limitations (e.g. claims 8-11 and 19-20) from the application.

Arguments against Claim Rejections under 35 U.S.C. § 103

1. Applicant argues that the combined references of Medwick and Stachowiak “would not have a protective coating applied “in non-liquid form” and which is removed by “peeling” as required by claim 1”.
2. Applicant further argues that Since Konda describes a protective sheet with particular application to semiconductor wafers, one of ordinary skill in the art would not have used the Konda protective sheet in the device of Stachowiak. For this reason, Applicant argues that there is no motivation to combine the cited art references of Stachowiak and Konda.

Examiner disagrees with the basis for each of Applicants above arguments. Specifically in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the

rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Applicant's attempts to decouple the references to Medwick, Stachowiak, and Konda and to analyze their application to the claims individually are found wholly unpersuasive since the original rejection was clearly based upon the teachings of all three references.

To summarize the basis for the above rejection;

Stachowiak teaches a Low-E reflective glass which reads on the claimed glass structure. Although Stachowiak is silent regarding a protective coating applied over the Low-E thin film, Medwick teaches that it is known to apply such a coating to protect the unit from damage during processing, shipment or storage. While Medwick renders it obvious to coat a Low-E coating with a protective film, neither Medwick nor Stachowiak explicitly relate the details of the protective film as claimed. However, Konda explicitly teaches a polyethylene protective film with a pressure-sensitive adhesive acrylic layer. Since both Medwick and Konda share a common goal which is fundamentally to prevent the marring of a delicate thin film structure on a refractory substrate, one having no more than an ordinary level of skill would recognize the applicability of Konda film protecting the Low E coatings of the Stachowiak and Medwick references.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Japanese publication (JP 2004-027018) to Miyaji Nobuyuki

Art Unit: 1791

et. al. discloses a removable acrylic based contact adhesive with a polyethylene backing sheet (see paragraph [0062]) for protection of glass panel substrates. Of particular interest to the claimed invention, the instant reference indicates that the preferred glass transition temperature (T_g) falls within a range of 25-75°C (see paragraphs [0032-0033]) and that temperatures below the T_g cause a decreased adhesion to the substrate. With respect to the subject matter presented in the newly submitted claims 21 and 22, one of ordinary skill in the art would reasonably be apprised of the adhesive T_g . It follows that a skilled practitioner in the arts would strive to maintain the functionally coated glass substrate above the T_g temperature in order to insure proper adhesion of the protective sheet to the substrate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON L. LAZORCIK whose telephone number is (571)272-2217. The examiner can normally be reached on Monday through Friday 8:30 am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1791

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Steven P. Griffin/
Supervisory Patent Examiner, Art
Unit 1791

JLL